AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1.   (Currently Amended)   A virtual protection method for a fiber path_in a network ~~consisting of~~having more than one ~~nodes~~node, comprising:

dividing each optical port of each of the nodes in the fiber path into multiple minimum protection units ~~individually~~;

defining a plurality of logic-systems in [[a]]the network, ~~wherein~~ each of the logic ~~system~~ systems ~~defines~~ including a physical media and carrying services,~~with a same protection mode~~ the physical media including nodes and fiber connecting those nodes;

mapping more than one of the minimum protection units into different ones of the plurality of logic-systems, ~~wherein~~ each of the plurality of logic-systems ~~consists of~~including ~~at least~~ two minimum protection units of ~~each~~ at least one of the nodes; and

determining, where protection for the services carried by a first logic-system of the plurality of the logic-systems is needed, a working mode of a node, of the nodes, ~~that belongs~~belonging to the first logic-system; the working mode including normal working mode, passing working mode, bridging working mode and switching working mode; wherein

in the passing working mode, ~~the~~ an input protection bus of a node is connected to ~~the~~ an output protection bus of ~~the~~ that node;

in the bridging working mode, the input protection bus of [[a]]that node is connected to the output working bus of ~~the~~ that node; and

in the switching working mode, the input working bus of [[a]]that node is connected to the output protection bus of ~~the logic~~that node.

2. (Canceled).

3. (Currently Amended) The method according to claim [[2]]1, further comprising~~wherein the multiplex section protection switching comprises the steps of~~:

~~creating logic-systems for protection switching;~~

obtaining four sets of pages: working pages, switching pages, bridging pages and passing pages by analyzing current configuration; and

after determining the working mode of the node belonging to the first logic-system~~whether a node is a passing node, a bridging node or a switching node~~, sending down a passing page to ~~the~~ that node if ~~the~~ that node is [[a]]in the passing ~~node~~working mode, sending down a bridging page to ~~the~~ that node if ~~the~~ that node is [[a]]in the bridging ~~node or~~working mode, sending down a switching page to ~~the~~ that node if ~~the~~ that node is [[a]]in the switching ~~node~~working mode, or sending down working pages to that node if that node is in the normal working mode.

4. (Canceled).

5. (Previously Presented) The method according to claim 1, wherein the minimum protection unit is a VC4 or a VC3.

6.   (Canceled).

7.   (Previously Presented)   The method according to claim 1, further comprising:

adjusting and crossing services which are sent to the same minimum protection unit from different minimum protection units by a time-division cross-connect unit in the transmission system.

8. (Currently Amended) A virtual protection device for a fiber path ~~consisting of~~having more than one ~~nodes~~node, comprising:

a component configured to

divide each optical port of each node in the fiber path into multiple minimum protection units individually;

define a plurality of logic-systems in a network, wherein each of the logic system defines a physical media and carrying services, ~~with a same protection mode~~the physical media including nodes and fiber connecting those nodes; and

map more than one of the minimum protection units into different ones of the plurality of logic-systems ~~to form more than one logic-system~~, wherein each of the plurality of logic-systems ~~consists of at least~~including two minimum protection units of ~~each~~at least one of the nodes;

a paging analyzer configured to analyze configuration of the plurality of logic-systems, creating corresponding working pages and storing the working pages in ~~the~~a switching controller ~~said below~~;

[[a]]wherein the switching controller is configured to send down corresponding working pages to ~~the~~a cross-connection panel ~~said below~~according to switching state; and

[[a]]wherein the cross-connection panel is configured to connect ~~the~~an input protection bus to ~~the~~an output protection bus if a passing working page is sent down, or,[[;]] connect the input protection bus to ~~the~~an output working bus if a bridging working page is sent down, or,[[;]] connect the input working bus to ~~the~~an output protection bus if a switching working page is sent down.

9.   (Original) The device according to claim 8, wherein the working pages are normal working pages, or passing pages, or bridging pages, or switching pages.

10-11.   (Canceled).